

WHAT IS CLAIMED IS:

1. A stator of a rotary electric machine for vehicle comprising:

a stator core having a plurality of slots;
a poly-phase stator winding disposed in the slots; and
an insulator insulating between the slots and the stator winding, wherein the stator winding comprises a plurality of segments having covered segments each covered with an insulating layer and bare segments having no insulating layer, and the bare segments are adjacent to only the covered segments in the slots.

2. The stator of the rotary electric machine for vehicle according to claim 1, wherein the segments are formed at least substantial U-shape, and the segments are extended from both axial sides of the stator core to form first coil ends group having turn portions of the segments and second coil ends group having a plurality of joining portions joining a pair of ends of the segments extended from the slots spacing apart a predetermined pitch each other.

3. The stator of the rotary electric machine for vehicle according to claim 2, wherein the turn portions have small turn portions surrounding no other turn portions, and the small turn portions are provided by the covered segments.

4. The stator of the rotary electric machine for vehicle according to claim 3, wherein the turn portions comprises first turn portions which is the smallest, second turn portions surrounding the first turn portions, third turn portions surrounding the second turn portions and forth turn portions surrounding the third turn portions, the first and third turn portions are provided

by the covered segments and the second and forth turn portions are provided by the bare segments.

5. The stator of the rotary electric machine for vehicle according to claim 3, wherein the turn portions have large turn portions surrounding the small turn portions, and the large turn portions are provided by the bare segments.

6. The stator of the rotary electric machine for vehicle according to claim 3, wherein the large turn portion surrounds a pair of the small turn portions being arranged side by side in a radial direction of the stator core.

7. The stator of the rotary electric machine for vehicle according to claim 1, wherein one of the covered segments is adjacent to the other one of the covered segments in the slots.

8. The stator of the rotary electric machine for vehicle according to claim 1, wherein the covered segment and the bare segment are alternately arranged in the slots.

9. The stator of the rotary electric machine for vehicle according to claim 1, wherein the segments are extended from both axial sides of the stator core to form coil ends group, and the segments are spaced apart a predetermined distance in the coil ends group.

10. The stator of the rotary electric machine for vehicle according to claim 9, wherein the segments are formed to provide the predetermined distance which is wider than a distance between the segments in the slots.

11. The stator of the rotary electric machine for vehicle according to claim 1, wherein the insulator is a sheet having ends,

the ends are overlapped with each other on an inner surface of the slots and the insulator closes an axially extended opening of the slots.

12. The stator of the rotary electric machine for vehicle according to claim 1, wherein the segments are extended from both axial sides of the stator core to form coil ends group, and the bare segments are adjacent to only the covered segments in the coil ends group.

13. The stator of the rotary electric machine for vehicle according to claim 1, wherein at least one of the covered segments provides a lead.